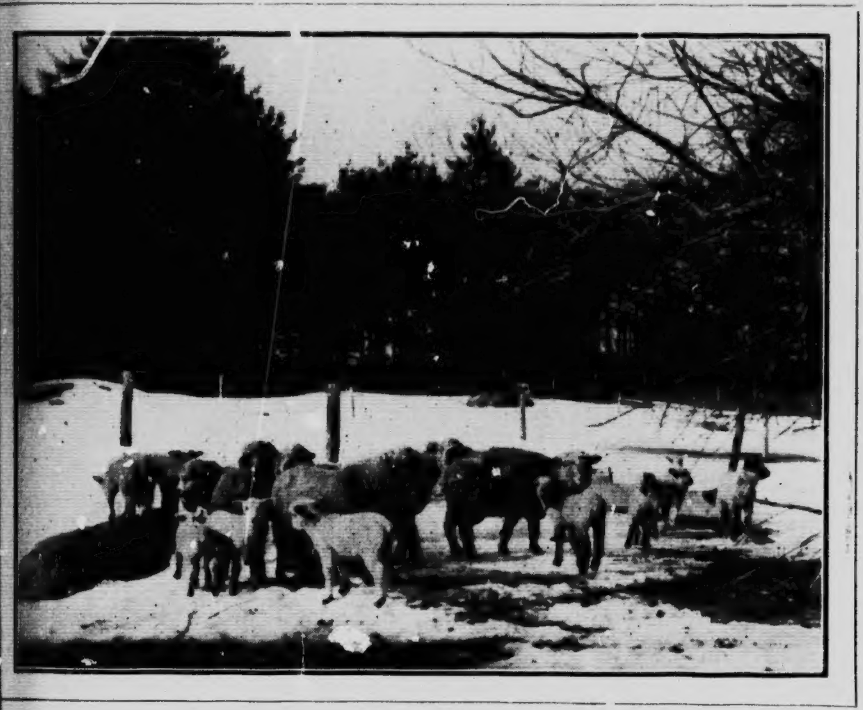
# HOTHOUSE OR WINTER LAMB RAISING UPON CANADIAN FARMS

BY

T. REG. ARKELL, B.S.A., B.Sc., AND HORACE V. BENT, B. S.



Winter Lambs.

DOMINION DEPARTMENT OF AGRICULTURE
Live Stock Branch

## PAMPHLET No. 11

SHEEP AND GOAT DIVISION

64

OTTAWA
GOVERNMENT PRINTING BUREAU
1915

79121—1

JOHN BRIGHT
Comm

“I

T. REC

Hotho
husbandry.
mutton rai
short perio
market wit
fresh and t
toothsome
developed
attention c
favourable
will remun
necessarily

“Hoth
this specia
house” ow
which com
79121—

DOMINION DEPARTMENT OF AGRICULTURE

LIVE STOCK BRANCH

JOHN BRIGHT,
Commissioner.

H. S. ARKELL,
Asst. Commissioner.

SHEEP AND GOAT DIVISION.

THE MANAGEMENT OF SMALL FLOCKS SERIES.

PAMPHLET No. 11.

*May, 1915.*

# "HOTHOUSE" OR WINTER LAMB RAISING.

BY

T. REG. ARKELL, B.S.A., B.S., and HORACE V. BENT, B.S.

Hothouse or winter lamb production represents a special phase of sheep husbandry. Under the ordinary and generally accepted routine of lamb and mutton raising, the season of marketing extends only through a comparatively short period in late summer or fall, when the year's supply is placed upon the market within the space of a few months, leaving the consumer without strictly fresh and tender lamb for the remainder of the year. In an effort to place this toothsome article within the reach of the epicure, the winter lamb trade has developed until at the present time it is considered worthy of the thought and attention of progressive and experienced sheep raisers who are situated in favourable localities where a sale may be found for their product at prices which will remunerate them for the extra care and attention that winter lambs will necessarily require.

## DEFINITION.

"Hothouse," "milk lambs," and "winter lambs" are titles used to designate this special product. They are oftentimes misunderstood. The term "hothouse" owes its origin to the manner of preparing the lambs for the market, which comprehends careful and scientific feeding under housed conditions.

These conditions are in no way analagous to the system employed in forcing plants under glass. It is seldom necessary to resort to artificial heating of buildings. The lambs, however, are dropped at a time of the year when the weather is cold. They must, therefore, be confined within a barn amply warm to promote rapidity of growth.

Lambs for the winter trade are never weaned, but are marketed when 9 to 14 weeks old, while still retaining the baby fat. They should be born in the fall and early winter, so as to be ready for the most favourable season of marketing which usually occurs between January 1 and the beginning of May.

### CHARACTERISTICS.

Quality is paramount in the winter lamb. The prices that must be secured, in order to furnish a satisfactory profit to the producer, render it advisable to cater to a special trade. Therefore, it is necessary to furnish an article worthy of the highest prices. The carcass should not weigh less than 30 pounds nor more than 45 pounds. In order to reach this weight in ten weeks, which is the most desirable age for marketing winter lambs, they must make a continuous and rapid growth, thus ensuring the requisite tenderness. The lamb should be fat and plump, and should possess a well-developed leg of mutton and plenty of juicy, lean meat, besides sufficient fat to ensure an attractive carcass when dressed for the market.

Lamb 40 days old weighing 48 lbs.

### ADVANTAGES.

Some of the advantages gained by raising winter lambs are here considered. In the first place, the lambs are prepared at a season of the year when farm work is least pressing. This factor alone should appeal to the farmer who carries on the sheep industry under mixed-farming conditions. Secondly, the entire lifetime of the lamb comes during the winter months. Therefore, they are not subject to depredations by dogs. Also, owing to their short lives, there is little to fear from parasitic infection, which undoubtedly is one of the chief causes of losses among summer lambs.

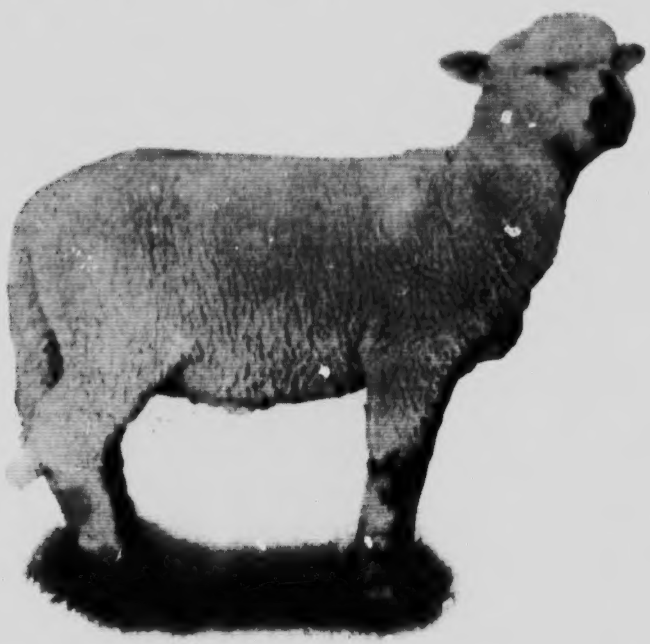
## BREEDING.

Owing to the inherent tendency of ewes to conceive in the fall and drop lambs in the spring, great difficulty may be encountered in inducing a change in the breeding season, so as to have lambs born in the fall. The principal exceptions to the general rule are found in the Tunis and Horned Dorset, which may breed and produce lambs fairly regularly at any desired time. For this reason, these breeds have gained popularity in the development of ewes for the hothouse lamb trade. The breeding habit of any breed, however, may be modified, so that lambs may be produced at any season of the year. The process involves judicious selection and mating, and may take several generations before all the ewes can be depended upon to breed at the proper time. To attain this end, only the early-breeding females are used, and their progeny are

Ready for the market.

in turn saved for early breeding. In time, therefore, the breeding habit may be changed from one season to another. This method is necessarily slow, and does not meet the immediate demand of the early-lamb producer.

November and December are considered the best months to have lambs dropped. The warm weather of the summer is prejudicial to the development of œstrum or "heat," so that there is no certainty of their breeding at this season, even though the ram be allowed with them. As far as possible, endeavour to duplicate the conditions of the natural breeding season. Select a cool period, if possible. Use a young and vigorous ram and allow him to run with the ewes at night, removing him during the heat of the day. The ewes should be in good condition, though not overfat. The flock should be provided with plenty of nourishing and especially succulent feed, which has a tendency to promote early œstrum, and is technically known as flushing.



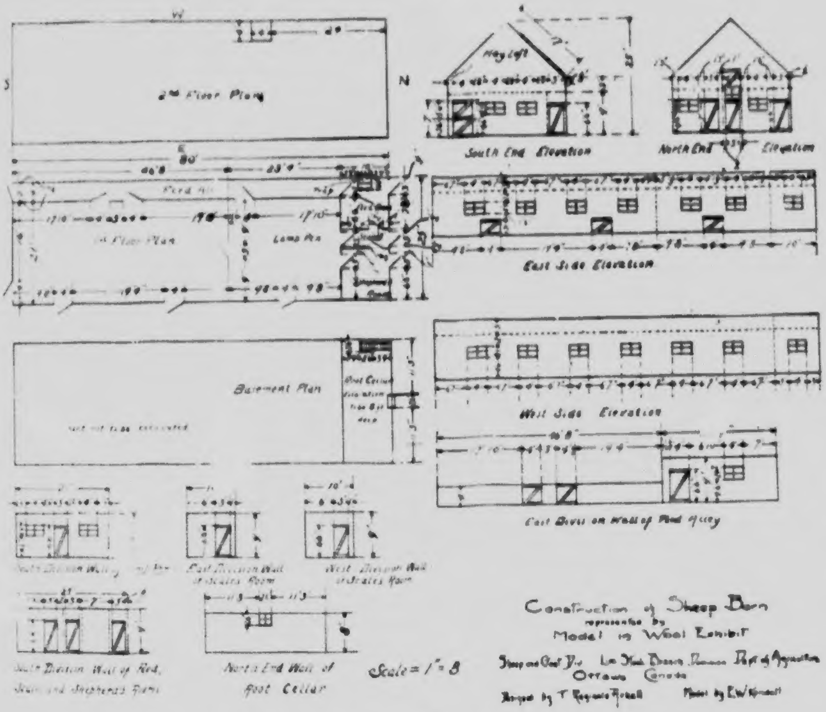
Sixty pounds in sixty days.

## FLUSHING THE EWES.

As the breeding season draws near, the ewes should be placed upon good pasture, preferably clover or alfalfa, supplemented with succulent and laxative feeds, such as rape, turnips, green rye, or wheat. This constitutes the process of flushing and creates thrift and a laxative condition, which induces rapid gains and the promotion of œstrum. Under such treatment, they will always breed with greater certainty. Probably the most popular soiling crop for flushing is rape. It grows quickly, and may be sown at almost any time to suit the requirements of the flock. Bloating is a danger to be guarded against in feeding rape. However, bloating may be largely prevented by allowing the ewes to become gradually accustomed to it, and by not permitting them upon it when the dew is heavy.

### CHARACTER OF EWES.

Only ewes of a high-milking strain should be used, since the lambs must depend largely upon milk for their sustenance. For this purpose, ewes combining good mutton qualities with roominess of body and refinement, indicative of a capacity for milk production, should be used.



Plan of Sheep Barn for Winter Lamb Raising.

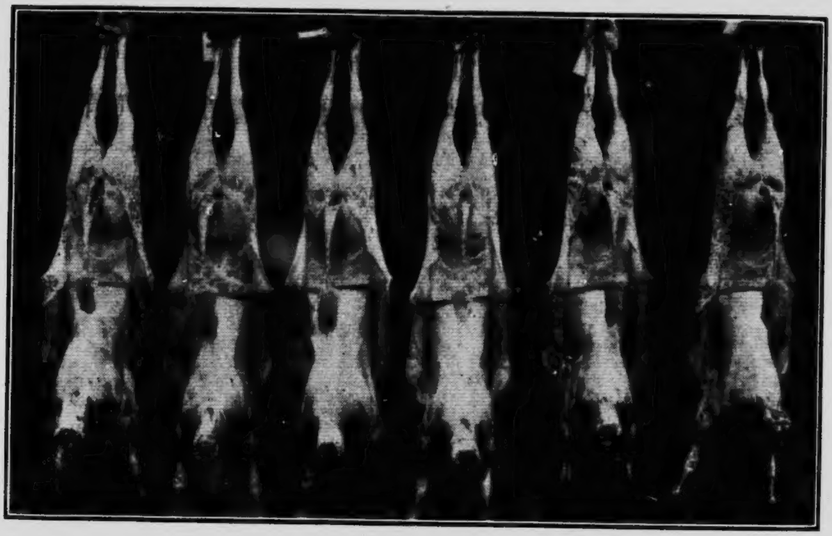
Prolificacy is another feature upon which stress must be paid in the selection of breeding ewes. One lamb per ewe at least should be raised, and better a lamb and a half.

### CHARACTER OF SIRE.

Where the progeny is primarily intended for slaughter rather than for breeding purposes, and where the early-breeding habit and milking qualities are highly developed, a sire of any of the mutton breeds may be used. Select one that has a compactness of body and fine quality of bone, as these go hand in hand with high dressing qualities. At the same time, he should be of an early-maturing strain, so as to ensure rapid gains in the early life of the offspring.

## BUILDINGS.

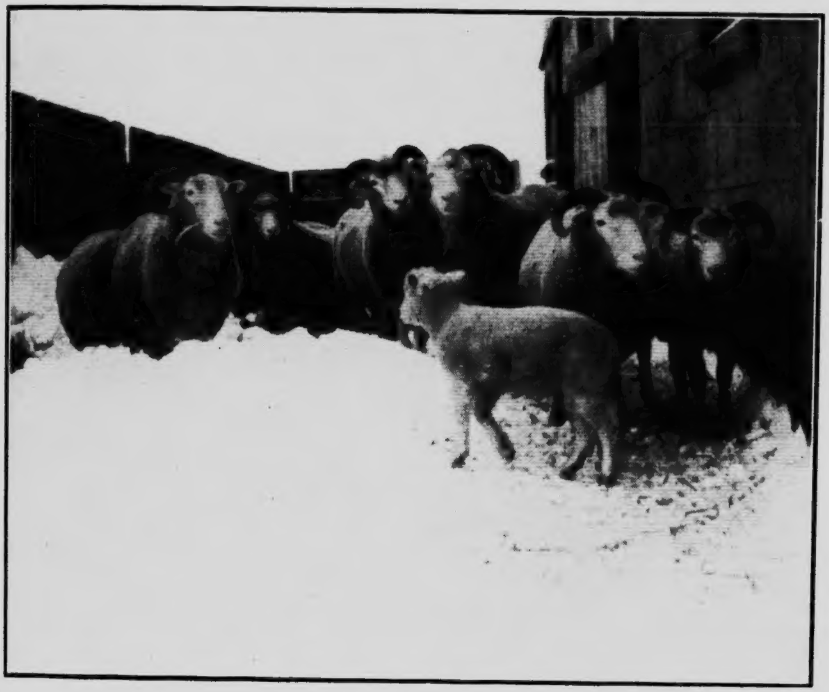
In northern climates, where a reasonably warm sheep house is provided the flock in winter, no more elaborate buildings are required for winter lambs. At this point it may be well to emphasize again the misunderstanding concerning the use of the word "hothouse." This term has, unfortunately, in many instances led farmers and breeders not acquainted with conditions of early-lamb production to believe that they could be raised only in buildings where artificial heat is supplied. Such buildings are by no means necessary, except in climates where the most rigorous weather prevails throughout the winter. The sheep barn must indeed be reasonably warm, but a sufficiently high temperature can usually be secured by constructing the walls of two thicknesses of boards with building paper between. The place should be roomy, light, and well ventilated. Unless the quarters are comfortable, it may be well to provide a warm lambing pen. This may be done by partitioning off a portion of the barn and sheathing it in a manner that will ensure a warm place for parturition.



Caul dressing; back view.

It has been found practical to keep both the ewe and lamb housed during the entire lifetime of the lamb. The youngster will take ample exercise if allowed a reasonable amount of room. However, after the first few days they will withstand considerable cold, and, in fact, will avail themselves of the freedom of the outdoor yards upon all days when the weather is not severe, and especially when the sun is shining. Dryness of quarters is essential in order to maintain the highest degree of health and vigour. Therefore, bedding should be renewed frequently, and excessive quantities of damp manure removed.

A barn, to contain 100 ewes and their lambs, may be constructed according to the following plan: It is 25 feet by 80 feet, and is designed so that the yards face towards the east, with the feed room and root cellar to the north, although local topography may demand a different position. It is always wise, however to have the yards face in a direction where the greatest amount of sunlight can be obtained and where the full force of the winter winds cannot reach them. Ten feet of one end is used for supply and feed rooms, and is separated from the remainder of the building by a partition. Underneath this, a root cellar, 8 feet deep, is excavated. The sheep pens themselves should not be floored. However, care should be taken to provide a high and dry location, so that even in spring, water will not accumulate either in the yards or pens.



Winter Lamb Producers.

Arrangement for the storage of hay and grain is provided in a second story, the floor of which is supported by posts from below, and if necessary to provide greater strength, by iron rods from the roof. The roof is an even pitch and is 25 feet from the floor to the peak. The windows are arranged to slide back and forth in a groove. They are placed 4 feet 6 inches above the floor level, and their position is shown in the accompanying plan.

The walls of the lambing pen may be boarded on both sides of the studs to form a still-air space. This should make it sufficiently warm to have lambs dropped in the coldest winter weather. The sheep pens may be divided into smaller divisions by portable feed racks. Other features are clearly shown in the diagram.

**Following is an estimate of the material required for the construction of the barn:—**

*Scantling 2 inches by 4 inches—*

| | | b.ft. |
|---|---|---|
| South division wall of lamb pen | 8 pieces each 9 feet and 1 piece 19 feet | 91 |
| South division wall of feed, scales, and sheep room | 12 pieces each 9 feet | 108 |
| Division walls of scales room | 6 pieces each 9 feet and 1 piece 6 feet | 60 |
| East division wall of lamb pen | 6 pieces each 12 feet and 1 piece 12 feet | 84 |
| South end of barn | 11 pieces each 12 feet and 3 pieces 8 feet | 156 |
| North end of barn | 15 pieces each 12 feet and 1 piece 9 feet | 189 |
| West side elevation | 22 pieces each 12 feet and 5 pieces 12 feet | 324 |
| East side elevation | 20 pieces each 12 feet and 6 pieces 12 feet | 312 |
| Division wall of feed alley | 12 pieces each 9 feet | 108 |
| Tops of partitions | 115 feet | 115 |
| Total | | 1,547 |

*Joists—*

Forty-eight 20-inch OC. 2 inches by 8 inches by 25 feet
or
Ninety-six 20-inch CC. 2 inches by 8 inches by 13 feet

using centre support of two 2 inches by 8 inches spiked together and suspended from collar beams by ¾ inch M.S. rods, one over centre of lambing pen, and 4 over large pen, 10 feet apart.

*Ceiling—*

sq.f.
Matched flooring or rough double boarding........ 2,000

*Partitions——*

b.ft.
South wall of lamb pen, 9 feet by 21 feet; 2 windows, 2½ feet by 4 feet; 1 door 3 feet by 6½ feet
North wall of lamb pen, 9 feet by 21 feet; 1 window, 2½ by 4 feet; 2 doors, 3 feet by 6½ feet
East wall of lamb pen, 9 feet by 24 feet; 2 windows, 2½ feet by 4 feet; 1 door, 4 feet by 6½ feet
Outer wall of lamb pen, 9 feet by 24 feet; 1 door, 3 feet 4 inches by 4 feet 810

*Roof—*

Rafters, 100 each 2 feet by 6 inches by 20 feet
Boarding........ 3,200
Shingles, 15360 (6 inches wide, 5 inches to weather)

*Flooring—*

10 feet by 25 feet—Joists, 25, 2 inches by 8 inches by 12 feet.
Boards 219 bf. matched, ⅞ inches thick.

*Boarding—*

sq.f
Inner boarding........ 2,720
Clap boarding........ 3,650
Building paper

*Posts, Sills and Doors—*

6 posts, 6 inches by 4 inches by 12 feet and 4 posts, 6 inches by 4 inches by 9 feet
Sill, 6 inches by 4 inches
Doors, 10, each 3 feet by 6 feet 6 inches
2, each 4 feet by 6 feet 6 inches
3, each 3 feet by 4 feet
1, 4 feet by 4 feet

*Windows—*

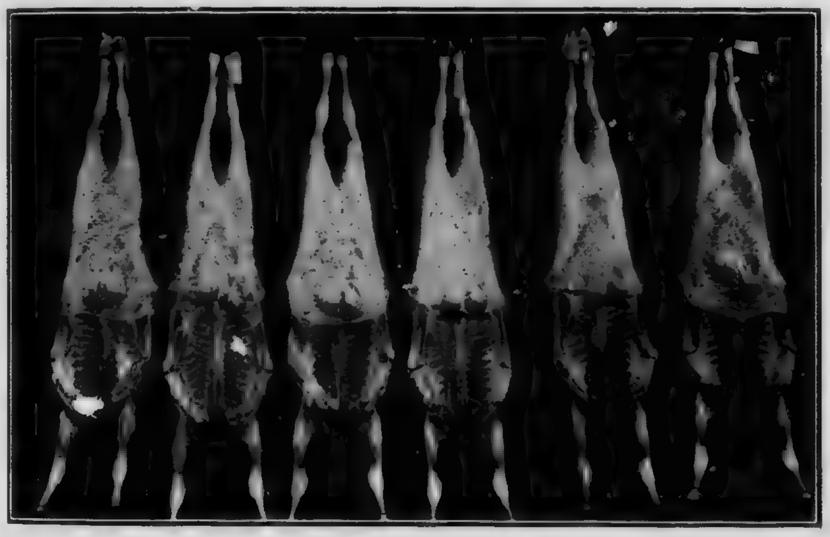
21, each 2 feet 4 inches by 4 feet, double sliding
1 1 foot 6 inches by 3 feet.

### THE PREGNANT EWE.

It is seldom necessary to feed grain to the ewes before lambing. Good pasture, especially clover or alfalfa, during the summer and fall, supplemented by rape or other succulent feeds, should be ample for their requirements. An abundance of pure water is indispensable. Always provide shelter where the ewes may find comfort during the heat of midsummer days and in stormy weather.

### CARE OF MILKING EWE.

After the lambs are born, the dams should be fed an adequate supply of a milk-producing ration. Care should be taken at this time not to overfeed especially with highly nitrogenous food, which may cause udder troubles, curtailing the flow of milk. In a few days there will be little danger, providing the lamb is healthy and vigorous and is eating well. Of the coarse fodders, alfalfa and clover give best results. Canada field peas, oats, or sorghum are also excellent.



Caul dressing; front view.

Succulent feeds are practically a necessity and, during the winter, roots must be largely used for this purpose. They should be fed with care during the early life of the lamb, as the milk flow may be so stimulated that the youngster may be unable to consume it, and udder troubles may follow. After the lambs have become able to take all the milk, roots may then be fed up to the capacity of the ewe to consume them. Corn silage furnishes excellent succulence, but should be fed with caution. Silage of good quality may be used, but not over 3 to 4 pounds per ewe per day. Only grains that are best adapted for milk production should be fed. Corn, oats, barley, and beans should be given unground, and wheat bran and oil cake deserve a prominent place in the mixture. At all times an abundance of milk should be sought to ensure rapid growth of the lamb.

Shearing is often recommended just before lambing time, assuring greater comfort during the closely housed period. At all events, the tags should be clipped from the region of the udders, in order that the lambs may easily find the mammæ, and to lessen the danger from wool balls, caused by the lamb swallowing portions of wool, where they have difficulty in locating the nipple.

## CARE OF THE LAMBS.

Continuous and rapid growth should be the slogan of the winter-lamb producer and every available means should be resorted to to reach that expedient. Weights of 60 pounds in sixty days have been reported from winter-lamb feeders. The lambs should have access to warm quarters, as they are found to make more rapid gains than if compelled to remain in uncomfortably cool pens. However, warmth must not exclude proper ventilation, and an opportunity for exercise.

The Finished product.

Encourage the lambs to begin eating as early as possible. For this purpose, their food should be placed where they can gain access to it by a creep or other device to keep the dams out, and where the lambs may enter at will and always find food at their disposal. Ground oats, wheat bran, and oil meal will be found suitable for the beginners. After they have learned to eat freely, corn meal, ground barley and, subsequently, whole grains as corn, oats, and barley, may be included in the ration. As the lambs become older, the proportion of corn may be increased.

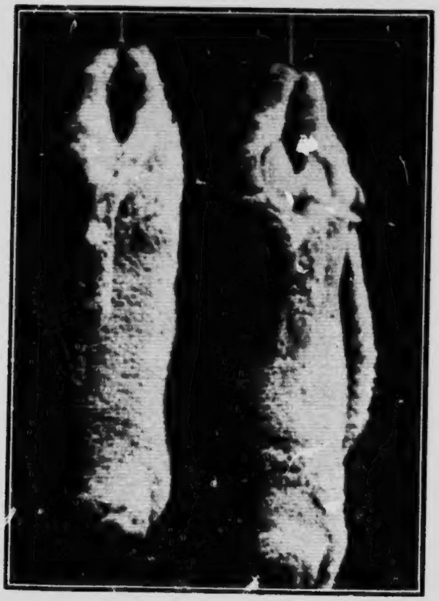
---

-For a description of diseases of lambs, the reader is referred to pamphlet No. 5 of the Dominion Live Stock Branch, copies of which maybe had upon application to the Live Stock Commissioner, Ottawa.

The following ration is recommended by a winter-lamb raiser in Eastern Canada: by weight, rolled or cracked-corn, 1 part; barley, 1 part; oats, 1 part; bran, 2 parts.

When the lambs have learned to eat, they should be fed with scrupulous regularity three times per day, and all food removed from the trough before any new is added, as the lambs have very fastidious appetites and will not eat food after it has once been "nosed over."

Clean water should be supplied daily in unstinted amounts, in clean troughs or vessels. Exercise is not considered as important in the welfare of the winter lamb as with other classes of lambs. Unless very closely housed, it will usually take sufficient exercise. Since its life will not be over three months, elaborate muscle building is not necessary. If the lamb is given too much freedom, more food will be required to produce the same gains, thus decreasing the net profits.



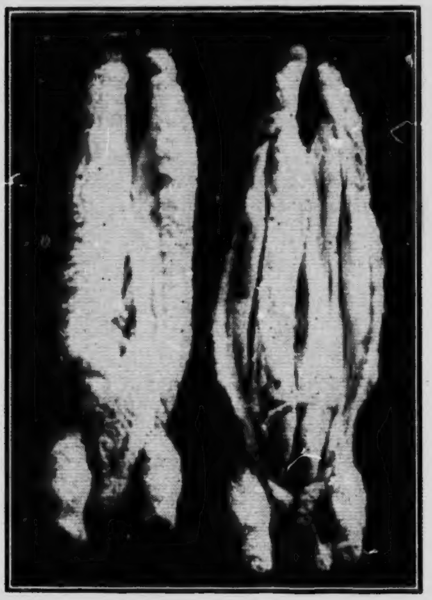
Hog dressing; back view.

Castration is not considered imperative with the winter lamb, and few breeders follow the practice. It is a simple operation, however, if performed when the lamb is about 10 days old. The lower third of the scrotum is severed with a knife and the testicles pulled out, including the spermatic cord by which they are attached. A good disinfectant is used, and in a short time the wound is healed.

## DRESSING.

Preparing the carcass for market requires some skill and great care. Since a more or less fancy market is being catered to, the dressed product should present as attractive an appearance as possible. Hog and caul dressing are the two methods most generally used.

No elaborate appliances are necessary. A sharp sticking knife, a dressing knife, small block and tackle and a spreader are the principal requisites. The blood should be thoroughly removed, and for this purpose the lamb is often suspended by the hind legs. In sticking, insert the knife at the angle of the jaw just below and back of the ear. Run the knife through the neck, cutting outward to get all the arteries and veins. When the lamb stops struggling, the head is removed, and, in order, the stomach and intestines. Neatly spread the caul fat over the exposed flesh, using toothpicks or small skewers to hold it in place. The operation should be performed with speed and care to ensure an attractive carcass. After a thorough cooling, the carcass is wrapped in heavy parchment paper or burlap and packed in suitable crates ready for shipment.



Hog dressing ; front view.

The chief difference betwixt hog and caul dressing is that in the former the pelt is not removed.

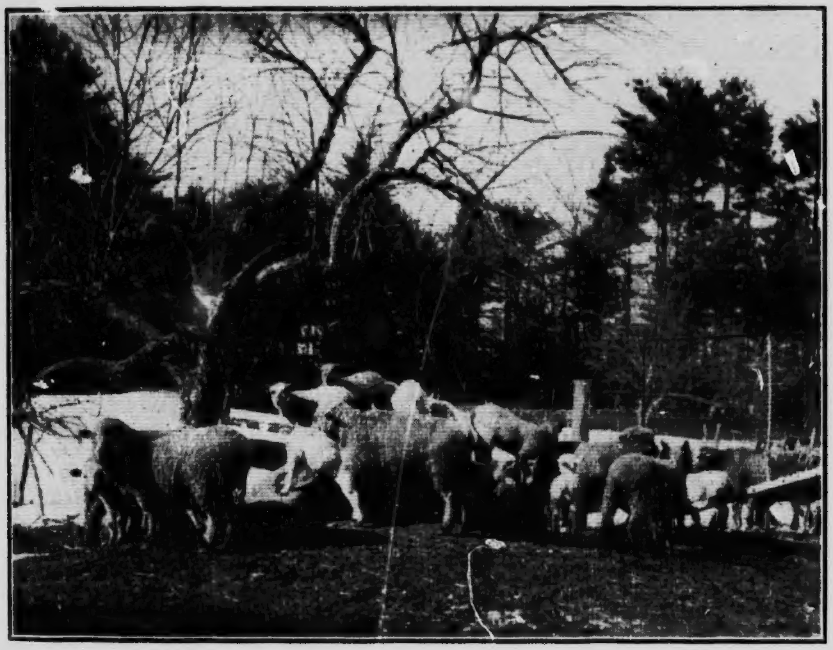
### MARKETING.

Markets for winter lamb must necessarily be limited. Outside of the larger cities, very little demand will be found, and even here it is possible that only small lots at a time may be disposed of. The producer should be located near enough to keep constantly in touch with the demands of his customers, and be ready upon short notice to dress and ship a few carcasses whenever necessary. He is producing a fancy product and is receiving a fancy price in return; hence the necessity of filling all orders promptly and satisfactorily. If the distance is so great as to prohibit catering to special customers, the lambs may be shipped alive to a commission house. A study of the available markets will after a few seasons, reveal the most profitable methods for the disposition of the winter-lamb crop.

## CONCLUSION.

Since the demand is not at the present time extensive, and the factors involved deviate somewhat from the regular routine of lamb production, the beginner may well enter the business with caution, that he may spare himself the disappointments which may follow any miscalculation or oversight.

Before the rearing of winter lambs is even attempted, the producer should be assured that there will be a demand for his carcasses. Outside of large cities or centres of wealth, this will be limited. The necessity of a favourable location should, therefore, be very apparent. Great distance from the market or from the point of shipment will result in excessive freight or express rates, and often create great difficulty in filling orders promptly upon short notice.



Promising youngsters.

Provision should be made for a supply of succulent and nutritious foods, which, as far as possible, should be raised upon the farm producing lambs. It may be permissible to buy feeds where they can be obtained cheaply, but an abundant supply can seldom be relied upon unless grown especially for the purpose.

Breeding of the ewes out of the regular and natural season, the rearing of the young lambs during cold weather, and the successful marketing of the finished product, all require the ability of a careful and perserving manager.